INDEX, VOLUME 50, 1957

Acalymma vittata, 357
Acanthoscelides obtectus, 391
Acarina, 361
Aceratagallia sanguinolenta, 272, 372
Aceria
sheldoni, 307
tulipae, 170
Acetylcholine, *in vitro* changes in rate of synthesis of, in eggs of Asiatic rice borer and cabbage armyworm, 440
Achatina fulica, 114
Acids, dietary fatty, role of in development of pink bollworm, 606
Acontia dacia, 398
Acrocercops cramerella, 517
Acronicta sp., 781
Acrosternum hilare, 599
Adelphocoris
lineolatus, 337
rapidus, 337
Aedes
aegypti, 46, 175, 357, 368, 678
cantator, 333
cinerus, 46
dorsalis, 46
fitchii, 46
flavescens, 46
melanimon, 46
sollicitans, 46, 333, 678
spp. (probably mostly *communis*), 46
taeniorhynchus, 46, 678
vexans, 333
Aedes canadensis, death-stress oviposition by, 112
Aerosols for the home garden, 324
Agallia constricta, 272, 372
Agathis festiva, effect of residues of DDT and parathion on, 51
Agonoderus lecontei, 43
Agrius cingulatus, 802
Agromyzidae, 829
Agrotis
malefida, 802
orthogonia, 640
ypsilon, 534, 802
Ahasverus advena, 117
Aldrin accumulated in swine grazed on treated pastures, 98, 99
Aldrin
Bioassay of in soil, 622
disappearance of from soil, 622
Aldrin, effect of
in soil on corn earworm, 697
in soil, on dry weight of plants and on mite development, 589
on English red worm, 699
Aldrin, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Aldrin for control of
alfalfa insects, 336
alfalfa weevil, 217
boll weevil, 633
cabbage maggot, 90
carrot weevil, 798
chiggers, 142
clover root borer, 255
clover root curculio, 645
cyclamen mite, 650
eastern subterranean termite, 317
European corn borer, 510
Great Basin wireworm, 703
green June beetle, 97
maize billbug, 708
northern corn rootworm, 29
omnivorous leaf roller, 61
onion maggot, 578
oriental fruit fly, 18
pale western cutworm, 641
plum curculio, 458
rice water weevil, 451
seed-corn maggot, 144
sugar-beet wireworm, 144
tiger beetle larvae, 504
tobacco flea beetle, 292
wireworms, 222
Aldrin, influence of on actio ı of
captan, 44
dichlone, 44
thiram, 44
Aldrin
resistance to by boll weevil, 467
susceptibility of boll weevil to, 701
Aldrin, toxicity of to
cherry fruit fly, 257
Hieroglyphus nigrorepletus, 108
Alfalfa
varieties resistant to the spotted alfalfa aphid, 134
Allethrin, evaluation of, on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Allethrin
intensity of synergism of some methylenedioxyphenyl acetals, 406
mixtures of with piperonyl butoxide against house fly, 150
toxicity of C^{14}, to house fly, 685
Allied Chemicals 876, for control of two-spotted spider mite, 129
Allotropa citri, 753
Am. Cyanamid 3911, for control of
boll weevil, 33
cotton flea hopper, 33
spotted alfalfa aphid, 125
thrips on cotton, 32
two-spotted spider mite, 129
Am. Cyanamid 3911, toxicity of to
beet leafhopper, 121
lygus bugs, 121
Am. Cyanamid 4124, evaluation of against
confused flour beetle, 373
German cockroach, 605
granary weevil, 373
khapra beetle, 373
Am. Cyanamid 4124, for control of
cat and dog fleas in yards, 366
cyclamen mite, 651
house fly, 37, 613, 791
Am. Cyanamid 4124, toxicity of to, cherry fruit fly, 257
Am. Cyanamid 12008, for control of
beet leafhopper, 121
boll weevil, 33, 699
cotton aphid, 533, 699
cotton flea hopper, 33
cotton leaf perforator, 699
cyclamen mite, 650
flower thrips, 699
Great Basin wireworm, 703
lygus bugs, 121
onion thrips, 699
plum nursery mite, 565
southwestern corn borer, 270
salt-marsh caterpillar, 699
spider mite, 699
Tetranychus cinnabarinus, 533
thrips on cotton, 32
two-spotted spider mite, 800
wooly apple aphid, 402
Am. Cyanamid 12009, for control of
boll weevil, 699
bollworm, 699
cotton aphid, 533, 699
cotton leaf perforator, 699
cyclamen mite, 650
flower thrips, 699
onion thrips, 699
salt-marsh caterpillar, 699
spider mite, 699
southwestern corn borer, 270
Tetranychus cinnabarinus, 533
Am. Cyanamid 12013, for control of
boll weevil, 699
bollworm, 699
cotton aphid, 699
cotton leaf perforator, 699
flower thrips, 699
onion thrips, 699
salt-marsh caterpillar, 699
spider mite, 699
Amblyomma
americanum, tests of potential acaricides of, 262
maculatum, 166
Ammonium chloride, use in fruit fly traps, 505
Amphimallon majalis, 273, 350
Amphorophora
sonchi, 727
sp., 727
Anagasta kühniella, 2, 118
Anasa tristis, 627
Anastrepha ludens, 278
a diet for, 215
Anopheles, 706
Anthicus floralis, 117
Anthonomus grandis, 31, 102, 398, 415, 418, 459, 481, 514, 632, 663, 666, 672, 676, 698, 700, 833
Antibiotics, against European foulbrood, 194
Anuraphis tulipae, 727
Aonidiella citrina, 171, 593
Apanteles
angaleti, 514
glomeratus, 835
militaris, 113
ornigis, 692
rubecula, 835
Aphaereta auripes, 596
Aphelinus semiflavus, 353, 817
Aphis
cardui, 727
fabae, 703, 727, 800
gossypii, 325, 398, 518, 533, 632, 698, 727
helianthi, 727
maidis, 518
medicaginis, 354
Aphis gossypii
effects of BHC with high- and low-gamma isomer content upon, 251
effects of lindane upon, 251
used in bioassay to measure accumulation of Thimet in cotton, 501
Aphycus helvolus, 593

INDEX, VOLUME 50, 1957

Acalymma vittata, 357
Acanthoscelides obtectus, 391
Acarina, 361
Aceratagallia sanguinolenta, 272, 372
Aceria
sheldoni, 307
tulipae, 170
Acetylcholine, *in vitro* changes in rate of synthesis of, in eggs of Asiatic rice borer and cabbage armyworm, 440
Achatina fulica, 114
Acids, dietary fatty, role of in development of pink bollworm, 606
Acontia dacia, 398
Acrocercops cramerella, 517
Acronicta sp., 781
Acrosternum hilare, 599
Adelphocoris
lineolatus, 337
rapidus, 337
Aedes
aegypti, 46, 175, 357, 368, 678
cantator, 333
cinerus, 46
dorsalis, 46
fitchii, 46
flavescens, 46
melanimon, 46
sollicitans, 46, 333, 678
spp. (probably mostly *communis*), 46
taeniorhynchus, 46, 678
vexans, 333
Aedes canadensis, death-stress oviposition by, 112
Aerosols for the home garden, 324
Agallia constricta, 272, 372
Agathis festiva, effect of residues of DDT and parathion on, 51
Agonoderus lecontei, 43
Agrius cingulatus, 802
Agromyzidae, 829
Agrotis
malefida, 802
orthogonia, 640
ypsilon, 534, 802
Ahasverus advena, 117
Aldrin accumulated in swine grazed on treated pastures, 98, 99
Aldrin
Bioassay of in soil, 622
disappearance of from soil, 622
Aldrin, effect of
in soil on corn earworm, 697
in soil, on dry weight of plants and on mite development, 589
on English red worm, 699
Aldrin, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Aldrin for control of
alfalfa insects, 336
alfalfa weevil, 217
boll weevil, 633
cabbage maggot, 90
carrot weevil, 798
chiggers, 142
clover root borer, 255
clover root curculio, 645
cyclamen mite, 650
eastern subterranean termite, 317
European corn borer, 510
Great Basin wireworm, 703
green June beetle, 97
maize billbug, 708
northern corn rootworm, 29
omnivorous leaf roller, 61
onion maggot, 578
oriental fruit fly, 18
pale western cutworm, 641
plum curculio, 458
rice water weevil, 451
seed-corn maggot, 144
sugar-beet wireworm, 144
tiger beetle larvae, 504
tobacco flea beetle, 292
wireworms, 222
Aldrin, influence of on actio ı of
captan, 44
dichlone, 44
thiram, 44
Aldrin
resistance to by boll weevil, 467
susceptibility of boll weevil to, 701
Aldrin, toxicity of to
cherry fruit fly, 257
Hieroglyphus nigrorepletus, 108
Alfalfa
varieties resistant to the spotted alfalfa aphid, 134
Allethrin, evaluation of, on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Allethrin
intensity of synergism of some methylenedioxyphenyl acetals, 406
mixtures of with piperonyl butoxide against house fly, 150
toxicity of C^{14}, to house fly, 685
Allied Chemicals 876, for control of two-spotted spider mite, 129
Allotropa citri, 753
Am. Cyanamid 3911, for control of
boll weevil, 33
cotton flea hopper, 33
spotted alfalfa aphid, 125
thrips on cotton, 32
two-spotted spider mite, 129
Am. Cyanamid 3911, toxicity of to
beet leafhopper, 121
lygus bugs, 121
Am. Cyanamid 4124, evaluation of against
confused flour beetle, 373
German cockroach, 605
granary weevil, 373
khapra beetle, 373
Am. Cyanamid 4124, for control of
cat and dog fleas in yards, 366
cyclamen mite, 651
house fly, 37, 613, 791
Am. Cyanamid 4124, toxicity of to, cherry fruit fly, 257
Am. Cyanamid 12008, for control of
beet leafhopper, 121
boll weevil, 33, 699
cotton aphid, 533, 699
cotton flea hopper, 33
cotton leaf perforator, 699
cyclamen mite, 650
flower thrips, 699
Great Basin wireworm, 703
lygus bugs, 121
onion thrips, 699
plum nursery mite, 565
southwestern corn borer, 270
salt-marsh caterpillar, 699
spider mite, 699
Tetranychus cinnabarinus, 533
thrips on cotton, 32
two-spotted spider mite, 800
wooly apple aphid, 402
Am. Cyanamid 12009, for control of
boll weevil, 699
bollworm, 699
cotton aphid, 533, 699
cotton leaf perforator, 699
cyclamen mite, 650
flower thrips, 699
onion thrips, 699
salt-marsh caterpillar, 699
spider mite, 699
southwestern corn borer, 270
Tetranychus cinnabarinus, 533
Am. Cyanamid 12013, for control of
boll weevil, 699
bollworm, 699
cotton aphid, 699
cotton leaf perforator, 699
flower thrips, 699
onion thrips, 699
salt-marsh caterpillar, 699
spider mite, 699
Amblyomma
americanum, tests of potential acaricides of, 262
maculatum, 166
Ammonium chloride, use in fruit fly traps, 505
Amphimallon majalis, 273, 350
Amphorophora
sonchi, 727
sp., 727
Anagasta kühniella, 2, 118
Anasa tristis, 627
Anastrepha ludens, 278
a diet for, 215
Anopheles, 706
Anthicus floralis, 117
Anthonomus grandis, 31, 102, 398, 415, 418, 459, 481, 514, 632, 663, 666, 672, 676, 698, 700, 833
Antibiotics, against European foulbrood, 194
Anuraphis tulipae, 727
Aonidiella citrina, 171, 593
Apanteles
angaleti, 514
glomeratus, 835
militaris, 113
ornigis, 692
rubecula, 835
Aphaereta auripes, 596
Aphelinus semiflavus, 353, 817
Aphis
cardui, 727
fabae, 703, 727, 800
gossypii, 325, 398, 518, 533, 632, 698, 727
helianthi, 727
maidis, 518
medicaginis, 354
Aphis gossypii
effects of BHC with high- and low-gamma isomer content upon, 251
effects of lindane upon, 251
used in bioassay to measure accumulation of Thimet in cotton, 501
Aphycus helvolus, 593

Aphytis mytilaspidis, 171
Apion ulicis, for suppression of gorse, 498
Aphis mellifera, 194, 211, 319, 570, 655, 694, 721, 731
Apis mellifera
dimorphism in the female, 759
effect of prior location on alfalfa foraging, 629
Aramite for control of
broad mite, 237
chiggers, 142
citrus red mite, 308, 365
clover mite, 136
cyclamen mite, 650
locust mite, 788
oriental fruit fly, 18
plum nursery mite, 565
Tetranychus cinnabarinus, 804
Tetranychus deviatarsus, 131
two-spotted spider mite, 129, 804
Archenomus sp., 172
Argas persicus, 41
Argyroploce schistaceana, 517
Argyrotaenia velutinana, 674, 692, 757
Aroclor (see chlorinated polyphenyl), to increase effective life of lindane, 218
Arphia sulphurea, 368
Arthropods of medical importance, worldwide compilations of, 705
Asarinin, effect of in pyrethrum mixtures as house fly sprays, 409
Arsenic trioxide, effect of on reduced glutathione of tissues of *Periplaneta americana*, 750
Aspergillus, 423
amstelodami, 661
candidus, 661
flavus, 662
glaucus, 659
ochraceus, 661
repens, 659
restrictus, 659
ruber, 661
Aspidiotiphagus sp., 172
forbesi, 757
lataniae, 172
perniciosus, 14
AT4, AT5, and AT6, repellency to stable flies, 710
AT-25, repellency to stable flies, 711
Attagenus piceus, 2, 356, 469
Attractants, angelica oils as Mediterranean fruit fly lures, 505
Aureofac, effect of on European foulbrood, 195
Azobenzene, for control of cyclamen mite, 650

Bacillus
larrae, 731
lentimorbus, 350, 718
popilliae, 350, 718
thuringiensis, 719
Bacillus thuringiensis, for control of
Heliothis spp., primarily *virescens*, 261
tobacco hornworm, 259
tomato hornworm, 259
Bags, polyethylene, for inactivating sweep samples, 523
Baits
apple pomace-calcium arsenate for carrot weevil, 799
DDVP-against house fly, 25
for Mediterranean fruit fly, 505
for melon fruit fly, 509
for oriental fruit fly, 508
Bait sprays
for oriental fruit fly, 17
malathion-yeast hydrolysate to control melon fly, 680
residual treatments of phosphorus compounds to control house fly, 36
Banasa dimidiata, 600
Bayer 16259, for control of Great Basin wireworm, 703
Bayer 17147, for control of cabbage looper 40
Bayer 19639, cotton seed treatments against
boll weevil, 617
bollworm, 617
cotton aphid, 616
cotton fleahopper, 616
desert spider mite, 616
serpentine leafminer, 617
thrips, 616
Bayer 19639, for control of
beet armyworm, 535
black cutworm, 534
cotton aphid, 534
cyclamen mite, 651
flea beetles on cotton, 535
Frankliniella sp., 534
lesser cornstalk borer, 536
spotted alfalfa aphid, 532
Bayer 19639
effect of on growth of alfalfa seedlings, 134
phytotoxicity of to cotton, 615
Bayer 21/199, for control of
cat and dog fleas in yards, 366
house fly, 38, 613, 791
Bayer 21/199, toxicity of to house fly, 790
Bayer 23129, effect of on growth of alfalfa seedlings, 134
Bayer L 13/59 (see also Dipterex), for control of house fly, 38
Bean yellow mosaic virus, transmission of by aphids, 727
Beauveria
bassiana, 173
globulifera, 645
BHC, effect of on English red worm, 699
BHC, for control of
abaca mosaic, 518
alfalfa weevil, 560
boll weevil, 633
bollworm, 633
cattle lice, 619
chiggers, 142
clover root curculio, 645
cotton aphid, 251
eastern subterranean termite, 317
northern corn rootworm, 29
omnivorous leaf roller, 61
onion thrips, 504, 828
Pyrilla perpusilla in India, 837
salt-marsh caterpillar, 279
sheep ked, 192
spotted alfalfa aphid, 125
BHC
in soil, effect on dry weight of plants and on mite development, 589
mortality of different stages of *juar* grasshopper treated with, 106
susceptibility of boll weevil to, 701
BHC, toxicity of to
beet leafhopper, 121
lygus bugs, 121
Bioassay
cotton aphid to measure Thimet uptake in cotton, 501
for residues of several insecticides on fresh and canned spinach, 598
of aldrin and lindane in soil, 622
value of in the study of soil insecticides, 622
to determine effect of fungicides on toxicity of dieldrin, 44
to determine effect of insecticides on action of fungicides, 45
Biological control
biotic factors in natural control of citrus mealybug, 753
fig scale parasites in California, 171
imported cabbageworm in the U. S. and Canada, 835
Lamprophorus tenebrosus to combat the giant African snail, 114
milky disease effective against European chafer, 350
plum curculio, 368
polyhedrosis virus on armyworm in Hawaii, 118
salt-marsh caterpillar, 280
sweetclover weevil by *Beauvaria bassiana*, 173
tobacco budworms, 261
tobacco hornworms, 259
Biology of
alfalfa weevil in Maryland, 810
boll weevil differing in susceptibility to chlorinated hydrocarbon insecticides, 481
cigarette beetle, 310
citrus flat mite, 566
clover mite, 135
Collops balteatus and *C. vittatus*, 395
corn leaf aphid, 110
Eotetranychus multidigituli, 784
Fieberiella florii, 668
house fly following treatment of larvae with malathion, 491
Lema praeusta, 471
Loxagrotis albicosta, 543
maggot complex associated with spinach, 595
Pagiocerus fiorii in Ecuador, 92
pink bollworm, 487
plum curculio, 187
Polistes sp., 778
Schizura ipomaeae, 285
Solenotus begini, 373
spotted alfalfa aphid, 805
strains of the two-spotted spider mite, 634
tiger beetles, 503
western cherry fruit fly, 584
western corn rootworm, 126
Birds attacking the alkali bee
Brewer's blackbird, 503
English sparrow, 503
Blapstinus sp., 535
Blastophaga psenes, 171
Blatta orientalis, 438
Blattella
germanica 2, 185, 356, 438, 604, 822
vaga, 438
Blissus leucopterus, 169
Bombus spp., 337, 357
Bracon
brevicornis, 514
gelechiae, 514
Bradysia sp., 596
Brevicoryne brassicae, 576 727
Brevipalpus
australis 567
californicus, 566
inornatus, 567
lewisi, 307, 566
Brochymoena quadripustulata, 600
Bryobia praetiosa, habits and control of, 135

Bucculatrix thurburiella, 698
Butoxy polypropylene glycol
for control of biting flies on cattle, 332
repellency to stable flies, 710
repellent against horn flies, 502
Burrowing nema in Florida, 562

Calcium arsenate, for control of
boll weevil, 465, 633, 673
bollworm, 633
carrot weevil, 799
omnivorous leaf roller, 62
pink bollworm, 673
Calcium cyanamide, for control of house fly larvae in manure, 515
Calcium polysulfide, for control of cyclamen mite, 650
Calendra maidis, 707
Callipterus, 352
Callisto geminatella, 692
Capitophorus fragaefolii, 727
Captan
effects of on honey bees, 572
for control of clover root curculio, 646
tests with against plum curculio, 182
Carabidae, 836
Carassius auratus, 5
Carbide and Carbon 7744 (see also Sevin) for control of
cabbage aphid, 577
southwestern corn borer, 270
Carbon tetrachloride, effect on all stages of rice weevil, 763
Carpocapsa pomonella, 756
Cartodere constricta, 117
Catocala sp., 781
Cediopsylla inaequalis inaequaelis, 724
Celerio lineata, 802
Ceratitus capitata, 277, 505, 508, 694
Ceratovacuna lanigera, 517
Cerococcus kalmiae, 113
Cerotoma trifurcata, 328
Chaetocnema pulicaria, 169
Chauliognathus pennsylvanicus, 357
Chelonus
heliopae, 514
narayana, 514
Chemagro 102, for control of aphids on swiss chard, 801
Chemagro 103, for control of aphids on swiss chard, 801
Chemagro 104, for control of aphids on swiss chard, 801
Chiggers, control of, 141
Chilocorus bivulnerus, 171
Chilomenes sexmaculata, 514
Chilo suppressalis, 440, 517
Chilotraea infuscatella, 517
Chipman R-6199, for control of
cyclamen mite, 651
periodical cicada, 714
spotted alfalfa aphid, 531, 819
Chlorbenside, for control of
citrus flat mite, 569
cyclamen mite, 650
plum nursery mite, 565
Chlordane, effect on
broomsedge, 360
English red worm, 699
Chlordane
existing tolerance of, 366
ineffectiveness against German cockroach, 605
in soil, effect on dry weight of plants and on mite development, 589
residues on peaches, 367
susceptibility of boll weevil to, 701
use in traps for fruit flies, 505, 509
Chlordane, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Chlordane, for control of
alfalfa insects, 336
boll weevil, 633
carrot weevil, 184, 797
cat and dog fleas in yards, 366
cattle lice, 619
chiggers, 142
clover root curculio, 646
cyclamen mite, 650
eastern subterranean termite, 317
green June beetle, 97
northern corn rootworm, 29
onion maggot, 578
oriental fruit fly, 19
sheep ked, 192
tobacco flea beetle, 292
wireworms, 222
Chlordane, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
German cockroach, 186
lygus bugs, 121
Chlorinated polyphenyl (Aroclor), possible synergisting effect on lindane, 219
Chlorion (Isodontia) elegans, 507
Chlorobenzilate, for control of
citrus bud mite, 309
citrus flat mite, 309, 569
clover mite, 139
cyclamen mite, 650
locust mite, 788
plum nursery mite, 565
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Chloroethyl chlorobenzene-sulfonate, for control of chiggers, 142
Chlorthion, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Chlorthion, for control of
cabbage aphid, 576
cat and dog fleas in yards, 366
chiggers, 142
cyclamen mite, 651
grape leafhopper, 413
house fly, 37, 613, 792
omnivorous leaf roller, 62
onion thrips, 504, 828
oriental fruit moth, 269
peach catfacing insects, 269
plum curculio, 269, 458
thrips on cotton, 677
Chlorthion, toxicity of to
beet leafhopper, 121
lygus bugs, 121
2-Chlorovinyl dimethyl phosphate, toxicity of to, house fly, 790
Cholinesterase inhibition by malathion and malaoxon, 160
Choristoneura fumiferana, mean larval head width, 499
Chortophaga viridifasciata, 368
Chrysopa californica, ovipositional response of, 221
Chrysopa plorabunda (californica), 753
Chrysops,
atlantica, 379, 390
discalis, 46
flavida, 740
fuliginosa, 379, 390
spp., 333
vittata floridana, 740
Cicindela
haemorrhagica, 503
pusilla imperfecta, 503
Cimex lectularius, 166
Circulifer tenellus, 120, 529
Clivina impressifrons, 43
Cloanthus frontalis, 272, 372
Coccinella
californica, 755
7-punctata, 355
Cockroaches, starved, longevity of, 438
Colias eurytheme, 357, 781
Colladonus
geminatus, 837
montanus, 837
Collops
balteatus, 395
vittatus, 395
Color, surface, influence of on mosquito landing rates, 678
Commellus sp., 169
Comperiella bifasciata, 171
Conoderus vespertinus, 292
Conophthorus lambertianae, overwintering of, 367
Conotrachelus nenuphar, 177, 187, 366, 457, 516, 757
Coriscus eurinus, 357
Corticaria sp., 117
Cotinine, main metabolite in nicotine-treated American cockroach, 824
Cotinis nitida, 96
CP-11327, for control of spotted alfalfa aphid, 820
Crioceris asparagi, 357
Cryolite, for control of omnivorous leaf roller, 61
Cryptolaemus montrouzieri, 753
Cryptophagus sp., 117
Ctenicera pruinina, 222
Ctenicera pruinina noxia, 702
Ctenocephalides
canis, 365
felis, 365
Cuerna gladiola, 169
Culex, 706
pipiens, 333
salinarius, 333
sp., 333
Culicoides variipennis, laboratory colonization of, 107
Cynaeus angustus, 2

2-4-D, effect of on quality of citrus fruit, 204
Dacus
cucurbitae, 509, 680
dorsalis, 16, 508
Damalinia bovis, 618
Datana integerrima, 357
DDA, absorption of on dust diluents, 429
DDE
adsorption of on dust diluents, 429
formed by various tissues of DDT-resistant house flies, 359
found in studies on toxicity and metabolism of DDT in the house fly, 67
DDT, absorption and degradation of
at varied dosages by the house fly, 748
in house flies of varied age, 499
DDT
accumulation in soils, 545
adsorption of on dust diluents, 429
DDT-dehydrochlorinase
in various tissues of resistant house flies, 359
levels of during metamorphosis of house fly, 11
DDT, effect of on
citrus mealybug and its natural enemies, 754
cyclamen mite, 651
on English red worm, 699
in soil, on plants and mite development, 589

on oviposition by *Chrysopa californica*, 221
temperature on house flies treated with, 446
DDT, effect of residues of on
agathis festiva, 51
Horogenes molestae, 51
Macrocentrus ancylivorus, 51
oriental fruit moth, 51
Phanerotoma grapholithae, 51
DDT, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
DDT
existing tolerance of, 366
residues on peaches, 367
resistance to by boll weevil, 464
use in traps for fruit flies, 505, 509
DDT, for control of
alfalfa insects, 336
boll weevil, 633, 664, 673
bollworm, 633, 664
boxwood psyllid, 86
cabbage looper, 40, 101, 664, 667
carrot weevil, 798
cat and dog fleas in yards, 366
cattle lice, 620
codling moth, 756
corn earworm, 225, 540
corn insects, 517
eastern subterranean termite, 317
euonymus scale, 88
European corn borer, 54, 510
European red mite, 757
Forbes scale, 757
grape berry moth, 455
grape leafhopper, 412
green June beetle, 97
Heliothis armigera on tobacco, 517
house fly, 38
maggot complex in spinach, 597
mango leafhoppers, 517
omnivorous leaf roller, 61
onion maggot, 578
onion thrips, 828
oriental fruit fly, 18
oriental fruit moth, 269
pale western cutworm, 641
peach catfacing insects, 269
pink bollworm, 634, 673
plum curculio, 269, 757
red-banded leaf roller, 757
rice water weevil, 451
salt-marsh caterpillar, 279
Schizura ipomaeae, 286
seed-corn maggot, 144
six-spotted leafhopper, 798
spotted alfalfa aphid, 125
sugar-beet wireworm, 144
tobacco budworms, 329
wireworms, 222
DDT, toxicity of
and metabolism of in the house fly, 67
in acetone and in oil to adult house flies, 105
DDT, toxicity of to
beet leafhopper, 121
house fly, 790
Ips confusus, 548
lygus bugs, 121
western pine beetle, 548
DDVP, for control of
bean leaf beetle, 328
Colorado potato beetle, 328
Mexican bean beetle, 328
strawberry spider mite, 328
DDVP
ineffective against cyclamen mite, 651
toxicity of to cherry fruit fly, 257
use in traps for fruit flies, 505, 509
Deltocephalus
balli, 272
flavicosta, 272
pulicaris, 372
Demeton
effect of seed-treated barley on greenbug infestation, 446
ineffective against plum curculio, 269
to obtain effect of greenbug infestation on wheat, 444
Demeton, for control of
abaca mosaic, 518
aphids, 15, 801
apple insects, 757
beet armyworm, 535
beet leafhopper, 535
broad mite, 237
cabbage aphid, 576
citrus red mite, 308
cotton aphid, 533
cyclamen mite, 650
flea beetle on cotton, 535
grape leafhopper, 412
hickory shuckworm, 508
omnivorous leaf roller, 61
oriental fruit fly, 19
pear leaf blister mite, 695
pear psylla, 15
plum nursery mite, 565
rice water weevil, 451
San Jose scale, 15
spotted alfalfa aphid, 125, 531
Tetranychus cinnabarinus, 533, 804
Tetranychus deviatarsus, 131
two-spotted spider mite, 129, 800, 804
tobacco flea beetle, 292
Demeton, residues detected in alfalfa and in honey, 722
Demeton, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
honey bees, 722
pea aphid, 722
Dendrocoris humeralis, 602
Dendroctonus
brevicomis, 548
pseudotsugae, bark-penetrating insecticides against, 266
terebrans, habits of attack of, 241
Dermacentor variabilis, 368
Dermestid infestations of wheat, 382
Desmometopa singaporensis, 815
Diabrotica
longicornis, 28
virgifera, 28, 127
undecimpunctata howardi, 357
Diachlorus ferrugatus, 742
Diazinon, effect of lima bean seed treatment against seed-corn maggot, 777
Diazinon, effectiveness against German cockroach, 605
Diazinon, for control of
aphids on pears, 15
cabbage aphid, 576
cat and dog fleas in yards, 366
chiggers, 142
citrus flat mite, 569
cyclamen mite, 650
grape berry moth, 456
grape leafhopper, 412
house fly, 24, 38, 515, 613, 791
maggot complex in spinach, 597
omnivorous leaf roller, 62
onion thrips, 504, 828
pear psylla, 15
plum curculio, 269
San Jose scale, 15
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
woolly apple aphid, 402
Diazinon, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
house fly, 790
lygus bugs, 121
Dibutyl 2,2-dichlorovinyl phosphate, toxicity of to, house fly, 790
Dichloroethyl ether, for control of Douglas-fir beetle, 266
Dichromorpha viridis, 368
Dicranoneura loca, 272
Dieldrin
accumulated in swine grazed on treated pastures, 98, 99
effect of lima bean seed treatment against seed-corn maggot, 777
effectiveness against thrips of screening greenhouse vents with treated cloth, 57
existing tolerance of, 366
ineffectiveness against German cockroach, 605
residues on peaches, 367
resistance to by boll weevil, 464
susceptibility of boll weevil to, 701
use in traps for fruit flies, 509
in soil, on dry weight of plants and on mite development, 589
Dieldrin, effect of
in soil on corn earworm, 697
on English red worm, 699
Dieldrin, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Dieldrin, for control of
alfalfa insects, 336
alfalfa weevil, 215, 217, 560, 575
boll weevil, 633, 664, 677
bollworm, 664
cabbage looper, 664, 667
carrot beetle, 369
carrot weevil, 184, 798
cattle lice, 619
chiggers, 142
clover root curculio, 224, 646
cotton fleahopper, 677
cyclamen mite, 650
eastern subterranean termite, 317
European chafer, 273
European corn borer, 510
Great Basin wireworm, 703
green June beetle, 97
Hypera meles, 224
lesser clover leaf weevil, 224
lone star tick, 263
maggot complex in spinach, 597
meadow spittlebug, 216
omnivorous leaf roller, 61
onion maggot, 578
onion thrips, 504, 828
oriental fruit fly, 18
oriental fruit moth, 269
pale western cutworm, 641
pea aphid, 216
peach catfacing insects, 269
plum curculio, 269, 458
rice water weevil, 451
salt marsh *Tabanus* larvae, 379
seed-corn maggot, 144
sheep ked, 192
sugar-beet wireworm, 144
thrips, 677
tobacco flea beetle, 292
wireworms, 222
Dieldrin, influence of on action of captan, 44

dichlone, 44
thiram, 44
Dieldrin, toxicity of to
beet leafhopper, 121
lygus bugs, 121
Diethyltoluamide, against mosquitoes, 48
Dikraneura
absenta, 837
carneola, 837
Dilan, for control of
cabbage aphid, 327
cabbage looper, 325
chiggers, 142
corn insects, 517
grape berry moth, 455
melon aphid, 325
Mexican bean beetle, 326
omnivorous leaf roller, 61
oriental fruit fly, 18
Phyllotreta spp., 325
potato aphid, 326
potato leafhopper, 326
salt-marsh caterpillar, 279
strawberry spider mite, 326
tomato fruitworm, 326
tomato hornworm, 326
Dilan, ineffective against cyclamen mite, 651
Dilan, toxicity of to cherry fruit fly, 257
Diluents, dust
Barden Clay, 429
Bentonite, Panther Creek, 429
Celite, 209, 429
Diluex A, 429
Pyrax ABB, 429
Dimite, for control of cyclamen mite, 650
Dimethylaminophenyl thiocyanate, for control of chiggers, 142
Dimethyl trichlorophenyl phosphorothioate (see Dow ET-57)
Dimethyl carbate, against mosquitoes, 48
Dimorphism in the female honey bee, 759
3,5-Dinitro-o-cresol, for control of chiggers, 142
Dinitro-ortho-cresol, for control of euonymus scale, 88
4,6-Dinitro-o-*sec*-butylphenol, for control of chiggers, 142
Diploptera punctata, 438
Diptera, 693
Dipterex, effectiveness against German cockroach, 605
Dipterex, for control of
boll weevil, 664, 677
bollworm, 664
cabbage aphid, 577
cabbage looper, 664, 667
cat and dog fleas in yards, 366
cotton fleahopper, 677
cyclamen mite, 651
Great Basin wireworm, 703
house fly, 515, 613, 791
maggot complex in spinach, 597
onion thrips, 504
thrips, 677
Dipterex, systemic effect of against
beg bug, 166
Gulf coast tick, 166
Dipterex, toxicity of to cherry fruit fly, 257
Dissosteira carolina, 368
Dithiocyanodiethyl ether, for control of chiggers, 142
Dithio-Systox (see also Bayer 19639), plant metabolism of, 338
DMC, for control of chiggers, 142
DN-111, ineffective against cyclamen mite, 651
DN-289, for control of two-spotted spider mite, 129
DN-289, ineffective against cyclamen mite, 651
Dodecyl thiocyanate, for control of chiggers, 142
Dorilas (*Eudorylas*) *subopacus*, 831
Dow ET-15, for control of
onion thrips, 828
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Dow ET-15, toxicity of to house fly, 790
Dow ET-57
against cattle grubs in Oregon, 244
against two species of cattle grubs, 246
toxicological studies of in cattle and sheep, 249
Dow ET-57, for control of
cabbage aphid, 577
cat and dog fleas in yards, 366
cattle grubs, 832
common cattle grub, 474
house fly, 515, 613, 791
maggot control in spinach, 597
onion thrips, 828
Dow ET-57, toxicity of to
cattle, 249
common cattle grub, 244, 246
house fly, 790
northern cattle grub, 244, 246
screw-worm, 248
sheep, 249
stable fly, 248
Draeculacephala antica, 272, 372
Drosophila control on harvested tomatoes, 476
Drosophila melanogaster, 44, 476, 512, 622

Ecological studies of valley black gnat, 764
Eisenia sp., probably *foetida*, 699
Elachertus sp., 692
Elachiptera costata, 596
Elasmopalpus lignosellus, 536
Elateridae, 43
Empoasca fabae
abundance of on various hosts, 496
migration of, 493
Empoasca
fabae, 272, 325, 337, 372
solana, 236, 534
sp., 169
Endria inimica, 169, 272, 372
Endrin, effect of
mouse-control spray on insect life in orchards, 692
on English red worm, 699
sprays for mouse control on insects on orchard cover crops, 837
Endrin, for control of
alfalfa weevil, 215, 217, 560
boll weevil, 633, 664, 673
bollworm, 634, 664
cabbage aphid, 576
cabbage looper, 40, 667
chiggers, 142
corn earworm 225, 540
corn insects, 517
cyclamen mite, 650
European corn borer, 510
greenhouse whitefly, 237
green June beetle, 97
Heliothis armigera on tobacco, 517
lone star tick, 263
meadow spittlebug, 216
mice in orchards, 837
northern corn rootworm, 29
omnivorous leaf roller, 61
onion thrips, 237, 504
oriental fruit moth, 269
pale western cutworm, 641
pea aphid, 216
pink bollworm, 673
plum curculio, 269
rice stem borer, 517
seed-corn maggot, 144
southern garden leafhopper, 237
southwestern corn borer, 270
spotted alfalfa aphid, 125
stem borer of rice, 221
sugar-beet wireworm, 144
thrips, 677
tobacco budworms, 329
two-spotted spider mite, 237
Endrin
residues on peaches, 367
resistance to by boll weevil, 464
susceptibility of boll weevil to, 701
Endrin, toxicity of to
beet leafhopper, 121
lygus bugs, 121
Endrosis lactella, 118
Eotetranychus
multidigituli, 784
sexmaculatus, 307
yumensis, 307, 567
Epiasarinin, effect of in pyrethrum mixtures as house fly sprays, 409
Epicauta pennsylvanicus, 357
Epilachna
philippinensis, 517
varivestis, 2, 325, 368
Epitrix
cucumeris, 435
hirtipennis, 292
tuberis, seasonal abundance and host plants of, 435
EPN, for control of
boll weevil, 465, 664, 677
bollworm, 664
cabbage looper, 667
Cerococcus kalmia, 114
chiggers, 142
corn insects, 517
cotton fleahopper, 677
grape berry moth, 455
grape leafhopper, 412
greenhouse whitefly, 237
hickory shuckworm, 508
onion thrips, 237
oriental fruit fly, 18
oriental fruit moth, 269
peach catfacing insects, 269
plum curculio, 269
rice stem borer, 517
rind borer, 517
southern garden leafhopper, 237
thrips, 677
two-spotted spider mite, 237
EPN
susceptibility of boll weevil to, 701
toxicity of to cherry fruit fly, 257
house fly, 790
Equipment
electrical device for recovery of pollen collected by honey bees, 655
flow meter for spray machines, 223
for measuring corn earworm injury, 371
light traps in Penna., 287
microsyringe adapter, 218
olfactometer to determine repellency of paradichlorobenzene, 470
traps for fruit flies, 505, 509
trap for producing pomace flies for bioassay of insecticides, 512
type of, to control tobacco budworms, 330
Ereynetes sp., 111
Eriococcus azaleae, 113
Eriosoma lanigerum, local dispersal of, 402
Eriophyes pyri, 695
Eritettix simplex, 368

Erythromycin, effect of on European foulbrood, 194
Erythroneura
comes, 411
comes comes, 411
elegantula, 411
lawsoniana, 758
tricincta, 411
variabilis, 411
Estigmene acrea, 279, 698, 802
Ethylene chlorobromide, for control of cyclamen mite, 525, 650
Ethylene dichloride, effect on all stages of rice weevil, 763
Ethylene dibromide, for control of cyclamen mite, 525, 650
Douglas-fir beetle, 267
Ethyl hexanediol, 48
Euchaetias egle, 357
Eupelmus
cyaniceps cyaniceps, 374
dimneriae, 374
Eurycotis floridana, 438
Euschistus
conspersus, 837
servus servus, 602
servus euschistoides, 602
tristigmus, 602
variolarius, 602
Eutrombicula alfreddugesi, 141
Exorista larrarum, 280

Fabrics, plastic- and rubber-coated, permeability to methyl bromide, 452
Feltia subterranea, 101, 802
Ferbam, effects of on honey bees, 572
Fermate, effects of on honey bees, 573
tests with against plum curculio, 182
Fertilizer applications, effect of on damage to wheat by greenbugs, 793
Fieberiella florii, 668
Films, plastic, permeability to methyl bromide, 452
polyethylene, 428
Flavor, effect of insecticide treatments to alfalfa on honey, 721
evaluation of fruits and vegetables, 213
Flies, biting, effect of control on milk production, 332
Flour, conditioned, effect of on toxicity of sodium fluoride to confused flour beetle, 653
Food, effect of, on fat accumulation of boll weevils, 459
Forficula, 836
Formica sanguinea, 357
Frankliniella
fusca, 55
sp., 31, 676
tritici, 55, 698
Fumigants, sulfuryl fluoride, as an insecticidal fumigant, 1
control of drywood termite, 7
methyl bromide compared with sulfuryl fluoride, 7
methyl bromide to control cyclamen mite on strawberries, 525
susceptibility of stages of rice weevil to, 761
Fungi, grain storage, associated with the granary weevil, 659
Fungus, green muscardine, on *Oryctes rhinoceros*, 767
Fungicides, compatibility with insecticides, 43
effects of on honey bees, 570

Galerucella xanthomelaena, 219
Gallimycin, effect of on European foulbrood, 196
Gelis sp., 692
General Chemicals 982, for control of two-spotted spider mite, 129
Genite, for control of
citrus flat mite, 569
citrus red mite, 308
Genite, ineffective against cyclamen mite, 651
Glyodin,
effects of on honey bees, 572
tests with against plum curculio, 182
Gnathotrichus
alni, 213
sulcatus, 213
Gonaxis kibweziensis, 114
Graminella nigrifrons, 272, 372
Graphognathos spp., 278
Grapholitha molesta, 49, 366, 374
Guthion, effect of on English red worm, 699
Guthion, for control of
aphids on swiss chard, 801
boll weevil, 465, 664, 673, 677
bollworm, 664
cabbage looper, 664, 667
cotton fleahopper, 677
cyclamen mite, 651
grape berry moth, 456
grape leafhopper, 413
Great Basin wireworm, 703
house fly larvae in manure, 515
maggot complex in spinach, 597
onion thrips, 504, 828
oriental fruit moth, 269
peach catfacing insects, 269
periodical cicada, 714
pink bollworm, 673
plum curculio, 269
plum nursery mite, 565
thrips, 677
spotted alfalfa aphid, 818
Tetranychus cinnabarinus, 804
two-spotted spider mite, 800, 804
woolly apple aphid, 402
Gulthion, susceptibility of boll weevil to, 701

Haematopinus eurysternus, 618
Heliothis
armigera, 517
virescens, 328, 780, 802
zea, 63, 105, 224, 328, 357, 371, 398, 539, 543, 632, 663, 666, 697, 698, 780, 802
Heliothrips haemorrhoidalis, 206
Helochara communis, 272, 372
Helopeltis
bakeri, 517
collaris, 517
Hemisarcoptes sp., 171
Hemitarsonemus latus, 236
Hemerocampa leucostigma, 780
Heptachlor
accumulated in swine grazed on treated pastures, 99
residues on peaches, 367
resistance to by boll weevil, 464
susceptibility of boll weevil to, 701
Heptachlor, effect of
in soil, on corn earworm, 697
on English red worm, 699
Heptachlor, effectiveness against thrips of screening greenhouse vents with treated cloth, 57
Heptachlor, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Heptachlor, for control of
alfalfa insects, 336
alfalfa weevil, 215, 217, 560, 573
boll weevil, 633
cabbage maggot, 90
carrot beetle, 369
carrot weevil, 184, 798
cattle lice, 618
chiggers, 142
clover leaf weevil, 224
clover root borer, 255
clover root curculio, 645
corn earworm, 540
cyclamen mite, 650
eastern subterranean termite, 317
European corn borer, 510
Great Basin wireworm, 703
greenhouse whitefly, 237
green June beetle, 97
Hypera meles, 224
lesser clover leaf weevil, 224
maggot complex in spinach, 597
meadow spittlebug, 216
northern corn rootworm, 29
omnivorous leaf roller, 61
onion maggot, 578
onion thrips, 237, 504, 828
oriental fruit fly, 20
pale western cutworm, 641
pea aphid, 216
plum curculio, 458
seed-corn maggot, 144
sheep ked, 192
southern garden leafhopper, 237
sugar-beet wireworm, 144
tiger beetle larvae, 504
tobacco flea beetle, 292
two-spotted spider mite, 237
wireworms, 222
Heptachlor, influence of on action of
captan, 44
dichlone, 44
thiram, 44
Heptachlor, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
lygus bugs, 121
Hercules AC-528, for control of
cabbage aphid, 576
citrus bud mite, 307
citrus flat mite, 307, 569
citrus red mite, 307
cyclamen mite, 651
plum nursery mite, 565
Tetranychus cinnabarinus, 804
six-spotted mite, 307
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Yuma mite, 307
Hermetia illucens, 613
Heterodera rostochiensis, 278
Heterostylum robustum, 503
Hibernation,
factors influencing pink bollworm, 642
sites of the boll weevil in Georgia, 833
Hieroglyphus nigroreplectus, 106, 108
Hippelates
bishoppi, 596
collusor, 813
dorsalis, 813
robertsoni, 813
Hippiscus rugosus, 368
Hippodamia convergens, 357
Holcomb 326, for control of
cyclamen mite, 650
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Holcostethus limbolarius, 602
Honey bees, 218
(See *Apis mellifera*)
Honey bees, annual cycle of pollen storage, 211

Horismenus sp., 692
Horogenes molestae, effect of residues of DDT and parathion on, 51
Hot-water treatment, effect of on pink bollworm in cottonseed, 795
Humidity,
atmospheric, effect of on longevity of starved cockroaches, 439
relative, effect of on longevity and fecundity of cherry fruit flies, 587
relative, influence of on incidence of polyhedrosis of Gypsy-moth larvae, 580
Hyalopterus atriplicis, 727
Hydroxycaprophenone, for control of chiggers, 142
Hydroxypentamethylflavan, for control of chiggers, 142
Hylastinus obscurus, band placement of insecticides for control of, 255
Hylemya
antiqua, 577
brassicae, 89, 596
cilicrura, 43, 143, 533, 595, 775
Hymenaceys nervosa, 602
Hymenoptera, 693
Hypera
brunneipennis, 353
meles, 224
nigrirostris, 224
postica, 215, 216, 559, 574, 645, 810
Hyphantria cunea, 357, 780
Hyperaspis lateralis, 753
Hypoderma
bovis, 115, 245, 248, 249, 474, 808, 832
lineatum, 115, 245, 248, 249, 474, 808, 832
Hyssopus rhyacioniae, 596

Injury, comparison of, caused by apple grain aphid and greenbug to small grains, 156
Insects (and other Arthropods) found in whole black pepper from the Orient, 425
Insects
attracted to the giant star flower, 693
collected by light traps in Penna., 287
control in relation to alfalfa seed production, 336
mortality at low temperatures, 368
pathogens, harmlessness of, 715
of stored-products, 519
problems in marketing agricultural products, 519
response to different sources of black light, 801
role of in the transmission of wheat streak-mosaic, 168
soil, control of on turnips, 143
transmission of abaca mosaic, 518
weight loss in stored grain by feeding, 391
Insecticides
accumulation in swine grazed on treated pastures, 99
adopted common names of, 226
chlorinated hydrocarbon, biology of bollweevil susceptible to, 481
compatability with fungicides, 43
dust diluents and carriers, 429
effect of sprays on local dispersal of woolly apple aphid, 402
effect of treatments to alfalfa on honey bees, insecticide residue, and honey flavor, 721
for control of peach insects, 268
granulated for control of alfalfa weevil, 574
granulated, for control of European corn borer, 510
in transplant water against tobacco flea beetle, 292
residual effectiveness of 16 formulations against German cockroaches, 604
soil, control of plum curculio with, 457
soil, effects of on corn earworm, 697
soil, effects on crops and mite nutrition, 587
susceptibility of different parts of the body of the *juar* grasshopper to the entry of, 108
systemic, effect on occurrence of spotted alfalfa aphid, 132
systemic, seed treatment of field crops with, 527
systemic, to control early-season cotton insects, 31
used against Philippine crop pests, 517
Insecticides, organic phosphorus
as residual sprays for control of house flies, 789
toxicity of to several insect species and to rats, 356
Ips confusus, 548
Isobornyl thiocyanoacetate, for control of chiggers, 142
Isodrin, for control of
chiggers, 142
clover root curculio, 646
cyclamen mite, 650
Great Basin wireworm, 703
greenhouse whitefly, 237
green June beetle, 97
omnivorous leaf roller, 61
onion maggot, 578
onion thrips, 237
oriental fruit fly, 20
plum curculio, 458
seed-corn maggot, 144
southern garden leafhopper, 237
sugar-beet wireworm, 144
two-spotted spider mite, 237
Isodrin, toxicity of to
Ips confusus, 548
western pine beetle, 548
Isolan, for control of aphids on swiss chard, 801
Isomalathion, effect of on carbohydrate metabolism of the mouse, cockroach, and house fly, 79

Kalotermes minor, 7
Kelthane, for control of
citrus flat mite, 569
citrus red mite, 364
cyclamen mite, 651
plum nursery mite, 565
Tetranychus cinnabarinus, 804

Laemophloeus sp., 117, 424
Lamprophorus tenebrosus, introduced into Guam to combat giant African snail, 114
Laphygma
exigua, 101, 535, 802
frugiperda, 102, 802
Lasioderma serricorne, 2, 424
ecological study of in warehouses, 310
Lasioglossum spp. 337
Laspeyresia caryana, 507
Laurylthiocyanate, ineffective against cyclamen mite, 652
Lead arsenate, for control of
apple insects, 757
plum curculio, 177
tobacco budworms, 329
Leafhoppers,
associated with forage crops in R.I., 271
infesting lawns in R.I., 372
Lema
praeusta, 471
semiregularis, 471
signatipennis, 471
species, list of host plants of, 472
Lepidosaphes
ficus, parasites of, 171
ulmi, 171
Leptinotarsa decimlineata, 328, 781
Leptocera longicasta, 596
Leptoconops torrens, 764
Leptocorisa acuta, 517
Leptomastidea abnormis, 753
Leptomastix dactyloppi, 753
Lethane, for control of sheep ked, 192
Leucophaea maderae, 438
Leucopis bella, 753
Light, black, response of insects to different sources of, 801
Ligyrus gibbosus, control in sunflowers, 369
Lime, hydrated, for control of plum curculio, 177
Limonius
californicus, 143, 222
canus, 222
Lindane
bioassay of insoil, 622
disappearance of from soil, 625
effective life increased with aroclor, 219
effect of lima bean seed treatment against seed-corn maggot, 777
for surveys of Tabanid larvae, 740
in soil, effect on dry weight of plants and on mite development, 589
systemic action of in alfalfa upon meadow spittlebug, 346
Lindane, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Lindane, for control of
alfalfa weevil, 217, 560
cabbage looper, 325
carrot weevil, 798
cat and dog fleas in yards, 366
cattle lice, 619
chiggers, 142
clover root borer, 256
clover root curculio, 647
cotton aphid, 251
cyclamen mite, 650
Great Basin wireworm, 703
maggot complex in spinach, 597
melon aphid, 325
onion maggot, 578
oriental fruit fly, 18
Phyllotreta spp., 325
potato aphid, 326
rice water weevil, 451
sheep ked, 192
tobacco flea beetle, 292
tomato fruitworm, 326
tomato hornworm, 326
Lindane, influence of on action of
captan, 44
dichlone, 44
thiram, 44
Lindane, toxicity of to
Ips confusus, 548
vegetable weevil, 833
western pine beetle, 548
Lindorus lophanthae, 171
Linognathus vituli, 618
Liothrips vaneechei, 369
Liriomyza
pusilla, 32
sp., 534
Lissorhoptrus oryzophilus, 450

Listroderes costirostris, 832
Listronotus oregonensis, 183, 797
Lorryia
californicus, 361
sp., 361
Losses in cotton caused by various levels of pink bollworm infestations, 609
Loxagrotis albicosta, 543
Loxostege
similalis, 802
sp., 781
Lygus
elisus, 837
hesperus, 120, 837
lineolaris, 269

M-2020 (dimethyl phthalate) against mosquitoes, and deer flies, 48
Macrocentrus ancylivorus,
effect of residues of DDT and parathion on, 49
Macrosiphum
barri, 727
dirhodum, 169
granarium, 169, 727
pisi, 216, 355, 356, 728, 770, 800, 838
rosae, 727
solanifoliae, 727
sp., 703
Macrosteles
fascifrons, 76, 169, 272, 372, 671, 798
lepidus, 272
Magicicada septendecim, 696, 713
Malaoxon, properties and metabolism in the cockroach and mouse, 159
Malathion
bait sprays, effect of on honey bee colony weight changes, 694
ineffective against cyclamen mite, 651
in traps for fruit flies, 505, 509
properties and metabolism in the cockroach and mouse, 159
toxicity of residues to the Indian-meal moth, 513
Malathion, effect on
carbohydrate metabolism of the mouse, cockroach, and house fly, 79
English red worm, 699
house flies following treatments of larvae, 490
Malathion, effectiveness against German cockroach, 605
thrips by screening greenhouse vents with treated cloth, 57
Malathion, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Malathion, for control of
aphids, 15
apple insects, 757
bean leaf beetle, 328
boll weevil, 465, 664, 677
bollworm, 664
boxwood leaf miner, 87
boxwood psyllid, 86
broad mite, 237
cabbage aphid, 327, 576
cabbage looper, 40, 101, 325, 667
cat and dog fleas in yards, 366
cattle lice, 620
Cerococcus kalmia, 114
chicken body louse, 64
chiggers, 142
clover mite, 136
Colorado potato beetle, 328
corn earworm, 225, 540
cotton fleahopper, 677
euonymus scale, 88
European corn borer, 52
fowl tick, 41
grape leafhopper, 412
green June beetle, 97
house fly, 37, 613, 791
locust mite, 788
maggot complex in spinach, 597
melon aphid, 325
melon fly, 680
Mexican bean beetle, 326
myocoptic mange mite, 695
omnivorous leaf roller, 61
onion thrips, 504, 828
oriental fruit fly, 18
oriental fruit moth, 269
peach catfacing insects, 269
pear psylla, 15, 695
Phyllotreta spp., 325
pine tortoise scale, 835
plum curculio, 269
plum nursery mite, 565
potato aphid, 326
potato leafhopper, 326
San Jose scale, 15
spotted alfalfa aphid, 125, 818
strawberry spider mite, 326
thrips, 677
Tetranychus deviatarsus, 131
tiger beetle larvae, 504
tomato fruitworm, 326
tomato hornworm, 326
two-spotted spider mite, 129
vegetable weevil, 833
woolly apple aphid, 402
Malathion in light oil, for control of
black scale, 593
California red scale, 594
citrus red mite, 594
Malathion, interaction with piperonyl butoxide applied to male house flies, 825
Malathion, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
lygus bugs, 121
Malrin, effectiveness against German cockroach, 605
Mamestra brassicae, 440
Mealybug, citrus, biotic factors in natural control of, 753
Melanoplus
bivittatus, 169, 337, 368
confusus, 337
femur-rubrum, 357
mexicanus, 169, 337, 368
spp., 337
Melophagus ovinus, 190
Menacanthus
cornutus, 375
pallidulus, 375
stramineus, 64, 375
Meromyza americana, 169
Mesoleius tenthredinis, 212
Metabolites, alkaloid, of nicotine in certain insects, 821
Metacide, for control of
boll weevil, 633
bollworm, 633
Cerococcus kalmia, 114
grape leafhopper, 412
oriental fruit fly, 18
two-spotted spider mite, 129
Metacide, to obtain effect of greenbug infestations on wheat, 444
Metarrhizium anisopliae, 767
Metatetranychus, see also *Panonychus*
Metatetranychus citri, 205, 221, 364, 518, 567, 593
ulmi, 109
Metatetranychus citri,
correlation of spray treatments with population trends, 300
effectiveness of two new phosphate insecticides against, 307
influence of season and weather on, 293
Methods
artificial nesting blocks for Osmia, 506
colonization of *Culicoides variipennis*, 107
for counting larvae of the confused flour beetle, 693
for determining pink bollworm infestations in cotton, 696
for determining whether cows excrete endrin in their milk, 348
for estimating larval populations of salt marsh Tabanids, 389
for introducing gases under tarpaulins, 526
for obtaining quantities of comparable Hessian-fly infested and uninfested wheat plants, 688
for regional approach to flavor evaluation of fruits and vegetables, 213
for studying resistance of alfalfa to aphids, 320
for use of systemic insecticides to protect seedling alfalfa, 530
house fly control with impregnated cords, 24
identifying types of ambrosia beetle damage, 213
insectary propagation of the squash bug and its parasite, *Trichopoda pennipes*, 627
laboratory colonization of the eye gnat, 813
laboratory maintenance of western subterranean termite, 238
mass rearing of six-spotted leafhoppers, 76
of application to control tobacco budworms, 328
perpetuating pink bollworm on a chemically defined diet, 220
Preplanting treatment for billbug control on corn, 707
rearing house fly on bran-alfalfa medium, 146
rearing leaf-mining Agromyzidae, 829
rearing plum curculio under laboratory conditions, 187
rearing pomace flies for bioassay of insecticides, 512
sampling crops for demeton residue analyses, 737
sampling soil for DDT residues, 545
screening greenhouse vents with impregnated cloth for thrips control, 55
self-treatment with malathion dust for chicken body louse on hens, 64
separation and identification of alkaloid metabolites of nicotine in insects, 822
techniques for sampling spotted alfalfa aphid, 385
to control corn earworm on sorghum, 540
to determine effects of soil insecticides on mite nutrition, 588
used in studying resistance to American foulbrood, 732
use of polyethylene bags for inactivating sweep samples, 523
Methoxychlor, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Methoxychlor, for control of
alfalfa insects, 336
biting flies on cattle, 332
boll weevil, 633

bollworm, 633
cabbage looper, 325
carrot weevil, 798
cherry fruit fly, 257
corn earworm, 540
eastern subterranean termite, 317
grape berry moth, 455
grape leafhopper, 412
melon aphid, 325
oriental fruit fly, 20
oriental fruit moth, 269
peach catfacing insects, 2, 9
plum curculio, 269
Phyllotreta spp., 325
potato aphid, 326
rice water weevil, 451
stable flies, 711
tomato fruitworm, 326
tomato hornworm, 326
vegetable weevil, 833
Methoxychlor
adsorption of on dust diluents, 429
toxicity of residues to the Indian-meal moth, 513
Methoxy-DDE, adsorption of on dust diluents, 429
Methyl bromide,
compared with sulfuryl fluoride, 7
effect of temperature and exposure period on insect toxicity, 4
for control of cyclamen mite, 523
permeability of plastic films to, 452
Methyl demeton, for control of
onion thrips, 504
two-spotted spider mite, 800
Methyl demeton thiol isomer, for control of spotted alfalfa aphid, 530
Methyl parathion, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Methyl parathion, for control of
boll weevil, 466, 633, 664, 677
bollworm, 633, 664
cabbage looper, 667
cotton aphid, 634
cotton fleahopper, 677
cyclamen mite, 650
omnivorous leaf roller, 61
onion thrips, 504, 828
pink bollworm, 634
spotted alfalfa aphid, 818
thrips, 677
Methyl parathion, susceptibility of boll weevil to, 701
Methyl parathion, toxicity of to house fly, 790
MGK-264, repellency to stable flies, 710
Microbial control products, standardization of, 715
Microcephalothrips abdominalis, 55
Milky disease, susceptibility of larvae to different strains, 350
Mites
relation of populations to seasonal leaf nitrogen levels in apple orchards, 109
role of in the transmission of wheat streak-mosaic, 168
MK-65, effect of on European foulbrood, 195
Monarthropalpus buxi, 87
Monolepta bifasciata, 517
Mosquitoes, influence of surface color on landing rates, 678
Musca domestica, 2, 11, 24, 36, 67, 79, 84, 104, 105, 146, 150, 159, 164, 358, 359, 368, 406, 409, 446, 484, 490, 499, 515, 684, 748, 789, 826, 828
Musca domestica
control of larvae in poultry houses, 613
ratio of the width to the length of the second abdominal sternite, 554
Muscina
assimilis, 596
stabulans, 596
Myocoptes musculinus, 695
Myzocallidium, 352
riehmi, 231
Myzocallis, 352
Myzus
cerasi, 727
certus, 727
persicae, 703, 800
solani, 727

Nauphoeta cinerea, 438
Nemagon, for control of clover root curculio, 647
Nemobius fasciatus, 357
Neolygus quercalbae, 357
Neostylopyga rhombifolia, 438
Neotran, ineffective against cyclamen mite, 652
Niagara 1240, for control of two-spotted spider mite, 804
Nialite, for control of periodical cicada, 714
Nicotine, evaluation of on
confused flour beetle, 373
granary weevil, 373
khafra beetle, 373
ineffective against cyclamen mite, 652
Nilotapsis halli, 278
N-methyl-1-naphthyl carbamate (see also Sevin), for control of periodical cicada, 696
N,N-diethyltoluamide, *ortho* and *meta* isomers of, against deer flies, 48
N-octyl bicycloheptane dicarboximide, in the control of cabbage looper, 40
Nomia melanderi, 503
Nosema cf. *legeri*, 836
Nosema polyvora, 836
Notropis a. atherinoides, 5
NPD, for control of
chiggers, 142
oriental fruit fly, 20
two-spotted spider mite, 129
NPD, ineffective against cyclamen mite, 652
N-pentylphthalimide, repellent to adult flour beetles, 516
Nutrition, mite, effect of soil insecticides on, 587

Obituary
Gordon Mansir Bentley, 115
Harry Ray Bryson, 229
Henry Gordon MacGregor Crawford, 497
Robert Kemble Fletcher, 229
Lloyd M. Ford, 204
Edward Walley Jones, 230
George M. List, 524
J. Harry Newton, 524
Octyl thiocyanate, for control of chiggers, 142
Off-flavor, none from pyrethrum dust applied to harvested tomatoes, 480
Oil emulsion, for control of
citrus red mite, 365
European red mite, 518
Oil, light, with parathion or malathion, for control of black scale, 593
Oils, petroleum, for control of
citrus bud mite, 307
citrus flat mite, 307
citrus red mite, 300, 307
six-spotted mite, 307
Yuma mite, 307
Oil, summer, for control of, euonymus scale, 88
Oil,
effects of spray and of variation in spray ingredients on juice quality of citrus, 197
of angelica as lures for Mediterranean fruit fly, 505
sprays, effect of timing on juice quality and yield of lemons, 74
Oncopeltus fasciatus, 357, 363
O,O-diethyl *S*-2-(diethylamino)ethyl phosphorothiolate, and its salts, systematic behavior of, 205
Opius oophilus, 17
Ornithonyssus bursa, 838
Orthodichlorobenzene, for control of Douglas-fir beetle, 267
Oryctes rhinoceros, 767
Oryzaephilus surinamensis, 2, 117, 424
Oscinella
frit, 372
melancholica, 596
Osbornellus borealis, 668
Osmia
californica, 507
lignaria, artificial nesting burrows for, 506
texana, 507
Ovex, for control of
broad mite, 237
citrus flat mite, 569
citrus red mite, 308
cyclamen mite, 650
European red mite, 758
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Ovotran, for control of clover mite, 139

Pagiocerus
fiorii, 92
frontalis, 92
Palorus ratzeburgi, 117
Panonychus (=*Metatetranychus*) *ulmi*, 757
Paradichlorobenzene, toxicity and repellency of to the black carpet beetle, 469
Paralobesia viteana, 411, 455
Para-oxon, toxicity of to house fly, 790
Paraphlepsius irroratus, 272, 372
Paratetranychus insularis, 22
Parathion, effect of on quality of citrus fruit, 197
Parathion, effect of residues of on
Agathis festiva, 51
Horogenes molestae, 51
Macrocentrus ancylivorus, 51
oriental fruit moth, 51
Phanerotoma grapholithae, 51
Parathion, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Parathion, for control of
alfalfa insects, 336
alfalfa weevil, 217
aphids on pear, 15
apple insects, 758
boll weevil, 633
bollworm, 633
cabbage looper, 40
carrot weevil, 797
Cerococcus kalmia, 114
chiggers, 142
clover root curculio, 647
corn earworm 225, 540
cyclamen mite, 650

grape berry moth, 455
grape leafhopper, 412
house fly, 24, 613
maggot complex in spinach, 597
omnivorous leaf roller, 61
onion maggot, 578
onion thrips, 504, 828
oriental fruit fly, 18
oriental fruit moth, 269
peach catfacing insects, 269
pear leaf blister mite, 695
pear psylla, 15
plum curculio, 269
plum nursery mite, 565
red-banded leaf roller, 675
San Jose scale, 15
spotted alfalfa aphid, 125, 818
Tetranychus cinnabarinus, 804
Tetranychus deviatarsus, 131
tiger beetle larvae, 504
two-spotted spider mite, 129, 804
vegetable weevil, 833
Parathion in light oil, for control of
black scale, 593
California red scale, 594
citrus red mite, 594
Parathion
to obtain effect of greenbug infestation on yield of wheat, 444
residues detected in alfalfa and in honey, 722
residue of on pea plants no protection from viruliferous aphids, 774
Parathion, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
honey bees, 715
lygus bugs, 121
pea aphid, 722
Paratrioza cockerelli, 435
Particle size, relation of to the penetration of subterranean termites through barriers of sand, 690
Pasteurella tularensis, attempted transmission of by fleas, 724
Pathogens, insect, harmlessness of, 715
Pauridea peregrina, 753
Peanuts, as food for large milkweed bug, 363
Pectinophora gossypiella, 102, 398, 606, 609, 632, 672, 696, 795
Pectinophora gossypiella
amino acid diet for, 219
factors influencing winter carryover, 642
imported parasites of, 514
larvae in secondary host plants, 644
mating and oviposition habits of, 487
oviposition sites of, 122
Pegomya hyoscyami, 595
Pentachlorophenol, for control of
clover root curculio, 647
eastern subterranean termite, 317
Penicel, effect of on European foulbrood, 195
Penicillin, effect of on European foulbrood, 195
Pepper, whole black, storage and shipment of from the Orient, 423
Perezia
legeri, 836
mesnili, 836
pieris, 836
Perezia pyraustae
effect of on *Pyrausta nubilalis*, 637
tranovarial transmission of in the corn borer, 638
Periodroma margaritosa, 802
Periplaneta americana, 2, 79, 85, 159, 368, 438, 750, 822
Perthane, for control of
cabbage looper, 101
cattle lice, 619
cyclamen mite, 652
grape berry moth, 455
omnivorous leaf roller, 61
onion thrips, 504, 828
Perthane, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
lygus bugs, 121
Pesticides, common names for, 839
Petrobia latens, 170
Phalacrus sp., 169
Phanerotoma grapholithae, effect of residues of DDT and parathion on, 51
Phenothiazine, ineffective against cattle grubs, 808
Phenoxathiin, for control of chiggers, 142
Phenylmercuric acetate, tests with against plum curculio, 182
Philaenus leucophthalmus, 216, 346, 559
Phosdrin, for control of
boll weevil, 464, 673
cabbage aphid, 576
corn earworm, 225, 540
hickory shuckworm, 508
house fly larvae in manure, 515
maggot complex in spinach, 597
onion thrips, 504, 828
periodical cicada, 714
pink bollworm, 673
plum nursery mite, 565
southwestern corn borer, 270
spotted alfalfa aphid, 820
Phosdrin
ineffective against cyclamen mite, 651
toxicity of to cherry fruit fly, 257
Phosphorous-32, for sterilization of white-pine weevil, 392
Phostex, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Phostex, for control of
citrus flat mite, 569
cyclamen mite, 651
Tetranychus cinnabarinus, 804
Phyllophaga, 287
Phyllotreta spp., 325
Phymata fasciata, 357
Physcus testaceous, 171
Phytomyza
atricornis, 373
ilicis, 88
Phytophaga destructor, 688
Pieris
brassicae, 835
rapae, 325, 357, 835
Pink bollworm infestations in cotton, losses caused by various levels of, 609
Piperettine, effects of in pyrethrum and allethrin mixtures against house fly, 164
Piperonyl butoxide
formulations, repellency to stable flies, 710
interaction with malathion applied to male house flies, 825
in the control of cabbage loopers, 40, 576
mixtures with allethrin against house fly, 150
with C^{14}-allethrin, toxicity of to house fly, 685
Piperonyl butoxide, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Pirazinon, toxicity of to cherry fruit fly, 257
Pissodes strobi
dispersion of, 264
sterilization of with gamma radiation, 393
Plant Pest Control Branch, recent developments in, 276
Plant Quarantine Division, in-service training programs in, 521
Plathypena scabra, 780
Platynota stultana, damage and control, 59
Platypus wilsoni, 213
Plistophora cf *schubergi*, 836
Plodia interpunctella, 118, 513
Podisus
maculiventris, 600
placidus, 60
Polistes
annularis, 778
bellicosus, 778
exclamans exclamans, 778
fuscatus fuscatus, 778
fuscatus pallipes, 778
hunteri hunteri, 778
metricus, 778
rubiginosus, 778
Pollination of white clover with low honey bee population, 318
Polyethelene bags for inactivating sweep samples, 523
Polyhedrosis virus
for control of cabbage looper, 551
of Gypsy-moth larvae, incidence of, 580
origin and dissemination in Hawaii, 118
Popillia japonica, 350, 360, 368, 718
Porthetria dispar, 278, 541, 580
Praon
palitans, 353, 817
sp., 353
Prays
citri, 517
endocarpa, 517
Predation, factors influencing, *Polistes* wasps on tobacco hornworm, 778
Pristiphora erichsonii, 212
Prodenia
eridania, 2, 356, 822
litura, 353
ornithogalli, 802
sp., 781
Programs, in-service training, in Plant Quarantine Division, 521
Protein hydrolysate, use in fruit fly traps, 505
Protoparce
quinquemaculata, 259, 778, 802
sexta, 259, 778, 802
spp., 332
Psallus seriatus, 31, 632, 666, 676
Pseudaletia unipuncta, 119, 802
forecasting outbreaks of, 112
Pseudococcus citri, 753
Psylla
buxi, 86
pyricola, 695
Pterocallidium, see also *Therioaphis*
Pterocallidium, 352
trifolii, 231
sp., 124, 132, 231, 320, 385, 398, 645
Pteromalus puparum, 836
Pulex irritans, 724
Puratized, effects of on honey bees, 572
Pycnoscelus surinamensis, 438
Pyrausta
nubilalis, 52, 360, 510, 637
salentialis, 517

Pyrazoxon, for control of
aphids on swiss chard, 801
cotton aphid, 533
cyclamen mite, 650
Tetranychus cinnabarinus, 533
two-spotted spider mite, 800
Pyrenone T-143
for control of stable flies, 711
for surveys of Tabanid larvae, 740
Pyrethrins, evaluation of on,
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Pyrethrins, for control of
cabbage looper, 40
Drosophila on harvested tomatoes, 476
omnivorous leaf roller, 61
Pyrethrins,
formulations, repellency to stable flies, 710
ineffective against cyclamen mite, 652
intensity of synergism with some methylenedioxyphenyl acetals, 406
synergized, evaluation of on strains of house flies, 828
Pyrethrins-piperonyl butoxide, for surveys of Tabanid larvae, 740
Pyrethrum
emulsions for surveys of Tabanid larvae, 740
mixtures, with asarinin, episasarinin, and sesamin, as house fly sprays, 409
repellency to adult flour beetles, 516
toxicity of residues to the Indian-meal moth, 513
Pyrethrum, for control of
bean leaf beetle, 328
cabbage aphid, 327, 576
Colorado potato beetle, 328
Mexican bean beetle, 326
omnivorous leaf roller, 61
potato leafhopper, 326
strawberry spider mite, 326
Pyrilla perpusilla, 837
Pyrolan, for control of oriental fruit fly, 19
Pythium, 44

R-326, repellency to stable flies, 710
Radioactive materials
absorption, metabolism, and excretion of C^{14}-labeled allethrin by house flies, 684
P^{32}-Bayer 19639 on alfalfa seed, 528
P^{32}-diethyl phosphorodithioic acid, 338
P^{32}-diethio-Systox, 338
P^{32}-labeled compounds to evaluate systemic behavior of *O,O*-diethyl *S*-2-(diethylamino)ethyl phosphorothiolate, 205
P^{32}-Thimet, 338, 528
P^{32}-thiol isomer of Systox, 528
P^{32} to sterilize white-pine weevil, 393
P^{32} used to study sulfone plant metabolite of thiono isomer of Systox, 399
$Sc^{46}Cl_3$ for tagging white-pine weevils, 264
Radiotracer studies, 527
Radopholus similis, situation in Florida, 562
Repellency of
camphor to black carpet beetle, 470
cedar oil to black carpet beetle, 470
naphthalene to black carpet beetle, 470
paradichlorobenzene to black carpet beetle, 469
Repellents
applied to cattle for control of stable flies, 709
effectiveness of against horn flies, 502
evaluation of against mosquitoes and deer flies in Oregon, 46
homologous series of cyclohexane aliphatic acids and amides against *Aedes aegypti*, 175
N-pentylphthalimide on insect-resistant packaging, 515
pyrethrum repellency to adult flour beetles, 516
Residues, insecticide,
accumulation in fat of swine grazed on treated pastures, 99
aldrin on Ladino clover after pasture treatment, 98
aldrin and dieldrin in fat and livers of swine grazed on treated pastures, 98
as influenced by treatments to alfalfa, 721
Bayer 19639 and Thimet on alfalfa, 536
comparative tests with emulsions and wettable-powders against the Indian-meal moth, 513
demeton in peaches, 361
demeton on lima beans, 131
dieldrin on forage, 275
dithio-Systox in cotton plant parts, 343
effect of alfalfa dehydration upon malathion, 511
effect of spray date of chlorinated hydrocarbons on peaches, 366
endrin in milk of cows fed endrin-sprayed alfalfa, 348
in wireworm control, 222
malathion on field-corn treated for first brood European corn borer, 53, 55
malathion on vegetable, berry, and tobacco, 362
methoxychlor in milk, 335
none from pyrethrum dust applied to harvested tomatoes, 480
of demeton on fruits, vegetables, and forage crops, 737
on fresh and canned spinach treated with various formulations, 597
schradan in meats of field-treated walnuts, 500
susceptibility of moths of oriental fruit moth and its parasites to DDT and parathion, 49
Thimet in cotton plants, 343
thiol-isomer oxalate in citrus fruits, 209
toxicity of Hercules AC-528 and Trithion on citrus fruits to citrus red mite, 309
Resistance
in honey bees to American foulbrood, 731
Resistance, in plants,
alfalfa varieties to spotted alfalfa aphid, 132
corn earworm-lethal-factor in silks of sweet corn, 105
effect of plant hairiness of cotton strains on boll weevil attack, 418
Lahontan alfalfa to the spotted alfalfa aphid, 320
sources of cotton strains to boll weevil, 415
Resistance, insecticide
boll weevil to BHC, endrin, and Guthion, 701
boll weevil to chlorinated hydrocarbons, 463
by strains of the two-spotted spider mite, 634
correlation of house fly characters with, 554
house fly to Dimite and MR-60, 556
human body lice to DDT and its analogs and synergists, 556
human body lice to lauseto new, lindane, pyrethrins, and Strobane, 558
inheritance of to chlordane in the German cockroach, 185
residual effectiveness of 16 formulations against chlordane-resistant and nonresistant German cockroaches, 604
salt-marsh caterpillar to toxaphene-DDT, 279
to BHC by boll weevil, 464
to TDE(DDD) in red-banded leaf roller, 674
Reticulitermes
flavipes, 316
hesperus, 238, 690
Rhagoletis
cingulata, 256
cingulata indifferens, 584
Rhopalosiphum
fitchii, 156, 169
maidis, 110, 169
pseudobrassicae, 398, 703
subterraneum, 169
Rohm & Haas FW-152, for control of
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Rohm & Haas FW-293, for control of
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Rotenone, for control of
cabbage looper, 40, 325
cyclamen mite, 650
melon aphid, 325
omnivorous leaf roller, 61
Phyllotreta spp., 325
potato aphid, 326
sheep ked, 192
tomato fruitworm, 326
tomato hornworm, 326
Ryania, for control of
codling moth, 756
corn insects, 517
European red mite, 758
Forbes scale, 757
plum curculio, 757
omnivorous leaf roller, 62
red-banded leaf roller, 757
woolly apple aphid, 402
Rhynacus gigantorhynchus, 564
Rhynchocoris longirostris, 517
Rhyzopertha dominica, 1, 117, 375
Rileymyia adusta, 280

Saissetia oleae, 361, 593
Scaphytopius acutus, 831, 837
Scaptomyza graminum, 596
Scatopse fuscipes, 596
Schirpophaga
nivella, 517
nivella intacta, 517
Schistocerea americana, 368
Schizura ipomaeae, 284
Schoenobius incertulas, 221, 517
Schradan, for control of
aphids on swiss chard, 801
boxwood leaf miner, 87
broad mite, 237
cotton aphid, 533
cyclamen mite, 650
holly leaf miner, 89
Tetranychus cinnabarinus, 533
two-spotted spider mite, 800
Schradan,
harvest residues of in meats of field-treated walnuts, 500

residues detected in alfalfa and in honey, 722
to obtain effect of greenbug infestation on yield of winter wheat, 444
Schradan, toxicity of to
beet leafhopper, 121
honey bees, 722
pea aphid, 722
Scolothrips sexmaculatus, 787
Scolytidae, 96, 367
Scymnus
pallidivestis, 363
sordidus, 753
subvillosus, 362
Seed treatment
compatibility of insecticides and fungicides used to treat corn seed, 43
effect of Thimet on emergence and its accumulation in cotton plants, 501
effect on lima beans after several months storage, 775
for control of early-season cotton insects, 31
to control rice water weevil, 450
Seiulus sp., 171
Sesamia inferens, 517
Sesamin, effect of in pyrethrum mixtures as house fly sprays, 409
Sevin=N-methyl-1-naphthyl carbamate (see also C. & C. 7744) for control of
cabbage aphid, 577
cyclamen mite, 651
onion thrips, 504
periodical cicada, 714
Shell OS-1836, for control of cyclamen mite, 650
Shell OS-2046, for control of cabbage looper, 40
Siphona irritans, 333, 502, 709
Sitona
cylindricollis, 173
hispidula, 224, 644
Sitophilus
granarius, 1, 117, 372, 659
Sitophilus
oryza, 117, 375, 424, 520, 761
Sitotroga cerealella, 2, 391, 520
Sodium fluoride, toxicity of to confused flour beetle, 653
Sodium pentachlorophenate, for control of eastern subterranean termite, 317
Soil type, effect of on
action of aldrin and lindane, 623
oviposition by *Chrysopa californica*, 221
Solenoptes capillatus, 618
Solenotus begini, 372
Spodoptera mauritia, 118
Standardization of microbial control products, 715
Stapelia gigantea, insects attracted to, 693
Stauffer R-1303, for control of two-spotted spider mite, 129
Stegobium paniceum, 424
Steneotarsonemus pallidus, 525, 648
Stethorus punctum, 787
Stilbesterol, ineffective against cattle grubs, 808
Stink bug injury to peaches, types and seasonal incidence of, 599
Stomoxys calcitrans, 333, 709
Stomoxys calcitrans, an analysis of for vitamin A, 836
Storage, effect of on insecticide-fungicide seed treatments on lima beans, 775
Streptomycin, effect of on European foulbrood, 195
Strobane, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Strobane, for control of
cabbage aphid, 327
cyclamen mite, 650
grape leafhopper, 412
greenhouse whitefly, 237
omnivorous leaf roller, 61
onion thrips, 237
Mexican bean beetle, 326
potato leafhopper, 326
southern garden leafhopper, 237
strawberry spider mite, 326
two-spotted spider mite, 237
thrips on cotton, 677
Strobane, toxicity of to
beet leafhopper, 121
cherry fruit fly, 257
lygus bugs, 121
Strymon melinus var-*pudica*, 357
Sulfur, effects of on honey bees, 573
Sulfur, for control of
boll weevil, 464, 633, 673
bollworm, 633
broad mite, 237
citrus flat mite, 569
omnivorous leaf roller, 61
pink bollworm, 673
plum curculio, 177
plum nursery mite, 565
salt-marsh caterpillar, 279
Tetranychus deviatarsus, 131
two-spotted spider mite, 129
Sulfuryl fluoride
biological, chemical, and physical properties of, 1
for the control of drywood termite, 7
Sulfuryl fluoride, toxicity of to
American cockroach, 3
Angoumois grain moth, 3
black carpet beetle, 3
cigarette beetle, 3
confused flour beetle, 3
corn beetle, 3
German cockroach, 3
granary weevil, 3
house fly, 3
lesser grain borer, 3
Mediterranean flour moth, 3
Mexican bean beetle, 3
saw-toothed grain beetle, 3
southern armyworm, 3
Sulphenone, for control of plum nursery mite, 565
Sulfone plant metabolite of thiono isomer of Systox, 399
Supella supellectillium, 438
Surveys,
cooperative, for potato leafhopper, 494
pyrethrum emulsions for Tabanid larvae, 740
Susceptibility of
the rice weevil to fumigants, 761
various legumes to infection with pea enation mosaic virus by pea aphid, 771
Sympherobius californicus, 753
Sympiesis sp., 692
Synergism
intensity of some methylenedioxyphenyl acetals with pyrethrins or allethrin, 406
of piperonyl butoxide with allethrin isomers against house fly, 150
Syrbula admirabilis, 368
Systox (see also demeton)
alfalfa insects, 336
boxwood leaf miner, 87
holly leaf miner, 89
Systox thiol isomer, for control of
flea beetle on cotton, 535
spotted alfalfa aphid, 530
Systox, sulfone plant metabolite of thiono isomer of, 399
Sytam, for control of periodical cicada, 714

Tabanus
atratus, 740
fumipennis, 740
fumipennis stygius, 740
gladiator, 742
imitans excessus, 740
lineola, 379, 390, 740
nigripes, 740
nigrovittatus, 379, 390
petiolatus, 740
spp., 333
Tabutrex,
a repellent against horn flies, 502
repellency to stable flies, 710
Taenothrips inconsequens, 55
Tartar emetic, for control of oriental fruit fly, 18
TDE, (DDD) evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
TDE, for control of
apple insects, 758
eastern subterranean termite, 317
omnivorous leaf roller, 61
pale western cutworm, 641
red-banded leaf roller, 675
tobacco budworms, 329
TDE, resistance in red-banded leaf roller, 674
Tedion, for control of
cyclamen mite, 651
periodical cicada, 714
Temperature, effects of on
adult house flies treated with DDT, 446
development and mortality of pupae of western cherry fruit fly, 585
egg deposition by *Drosophila*, 480
toxicity and metabolism of DDT in the house fly, 67
Tenebroides mauritanicus, 117
TEPP,
for control of chiggers, 142
for control of cyclamen mite, 650
TEPP, toxicity of to cherry fruit fly, 257
Termite, western subterranean, prolonged maintenance of, 238
Terramycin, effect of on European foulbrood, 196
Tetracycline, effect of on European foulbrood, 195
Tetranychidae, 632
Tetranychus
atlanticus, 128, 326, 803
cinnabarinus, 128, 533, 634, 803
desertorum, 616, 803
deviatarsus, 128
schoenei, 803
sp., 395
telarius, 109, 128, 206, 236, 529, 588, 634, 703, 785, 800, 803
tumidus, 588, 698, 803
Tetraopes tetrophthalmus, 357
Thamnophthorus sp., 92
Thelohania mesnili, 836
Therioaphis, see also *Pterocallidium*
Therioaphis
luteola, 354
maculata, 235, 352, 529, 805, 817
ononidis, 353
rhiemi, 354
trifolii, 354
Therioaphis maculata
foreign parasites of, 352
toxic effects of, on alfalfa, 742

Thimet, cotton seed treatment, against,
boll weevil, 617
bollworm, 617
cotton aphid, 616
cotton fleahopper, 616
desert spider mites, 616
serpentine leafminer, 617
thrips, 616
Thimet, effect of on
cotton plants, 280, 615
growth of alfalfa seedlings, 134
seedling cotton emergence, 501
stand of seedling alfalfa, 133
Thimet, for control of
aphids on swiss chard, 801
bean aphid, 703
beet armyworm, 535
black cutworm, 534
boll weevil, 699
bollworm, 699
cabbage looper, 534
clover root curculio, 647
corn earworm, 540
cotton aphid, 502, 534, 699
cotton leaf perforator, 699
cyclamen mite, 651
Empoasca solana, 534
flea beetles on cotton, 535
flower thrips, 699
Frankliniella sp., 534
Great Basin wireworm, 703
green peach aphid, 703
lesser cornstalk borer, 536
Liriomyza sp., 534
onion thrips, 699
plum curculio, 269
plum nursery mite, 565
rice water weevil, 451
salt-marsh caterpillar, 699
southwestern corn borer, 270
spider mite, 699
spotted alfalfa aphid, 531
Tetranychus atlanticus, 534
tobacco budworms, 329
turnip aphid, 703
two-spotted spider mite, 703, 800
whitefly, 534
woolly apple aphid, 402
Thimet, plant metabolism of, 338
Thiodan, for control of
boll weevil, 466, 664
bollworm, 664
cabbage looper, 667
cyclamen mite, 651
maggot complex in spinach, 597
Thiodan
acute oral toxicity to white rats, 484
chemical and biological experiments with, 483
paper chromatographic analysis of, 484
Thiourea, for control of house fly larvae in manure, 515
Thiram, effect of on lima bean seed treatments with insecticides against seedcorn maggot, 776
Thrassis bacchi gladiolis, 724
Thrips tabaci, 55, 236, 504, 698, 828
TM-10, effect of on European foulbrood, 196
Thyanta
calceata, 602
custator, 602
Thysanoptera, 169
Toumeyella numismaticum, 835
Toxaphene
accumulated in swine grazed on treated pastures, 99
effect of on English red worm, 699
Toxaphene, evaluation of on
confused flour beetle, 373
granary weevil, 373
khapra beetle, 373
Toxaphene, for control of
alfalfa insects, 336
boll weevil, 33, 617, 633, 664
bollworm, 617, 664
cabbage aphid, 327
cabbage looper, 40, 101, 325, 667
carrot weevil, 184, 798
chiggers, 142
clover root curculio, 645
corn earworm, 540
cotton aphid, 616
cotton fleahopper, 33, 616
cyclamen mite, 650
desert spider mite, 616
eastern subterranean termite, 317
European corn borer, 510
green June beetle, 97
lone star tick, 263
melon aphid, 325
Mexican bean beetle, 326
omnivorous leaf roller, 61
onion maggot, 578
onion thrips, 504
oriental fruit fly, 20
pale western cutworm, 641
Phyllotreta spp., 325
potato aphid, 326
potato leafhopper, 326
salt-marsh caterpillar, 279
seed-corn maggot, 144
sheep ked, 192
spotted alfalfa aphid, 125
strawberry spider mite, 326
sugar-beet wireworm, 144
thrips, 33, 616, 677
tomato fruitworm, 326
tomato hornworm, 326
Toxaphene,
resistance to by boll weevil, 464
susceptibility of boll weevil to, 701
Toxaphene, toxicity of to
beet leafhopper, 121
Ips confusus, 548
lygus bugs, 121
western pine beetle, 548
Toxoptera graminum, 156, 169, 793
evaluation of damage to small grains, 443
Transmission of peach yellow leaf roll virus, 668
Traps
for rearing pomace flies for bioassay of insecticides, 512
for collecting valley black gnat, 765
for studying response of insects to different sources of black light, 802
low-cost plastic for fruit fly, 508
to survey for Mediterranean fruit fly, 505
Trialeurodes
abutilonea, 534
vaporariorum, 236
Triaspis curculionis, 268
Tribolium
castaneum, 117
confusum, 1, 117, 368, 372, 474, 653, 693
spp., 516
Trichlorobenzene, for control of Douglas-fir beetle, 267
Trichogramma minutum, 103
Trichopepla semivittata, 602
Trichoplusia ni, 39, 101, 325, 534, 551, 663, 666, 802
Trichopoda pennipes, 627
Triethyl tin hydroxide and its esters, evaluation of as insecticides, 84
Trigonotylus ruficornis, 169
Trioxys utilis, 353, 817
Triphleps minuta, 362
Triphyllaphis, 352
Trithion, for control of
citrus bud mite, 307
citrus flat mite, 307, 569
citrus red mite, 307
cyclamen mite, 651
onion thrips, 828
periodical cicada, 714
plum nursery mite, 565
six-spotted mite, 307
spotted alfalfa aphid, 818
Tetranychus cinnabarinus, 804
two-spotted spider mite, 804
woolly apple aphid, 402
Yuma mite, 307
Tritneptis hemerocampae, 374
Trogoderma
glabrum, 382
granarium, 277, 372, 374, 382
inclusum, 382, 424
parabile, 382
teukton, 382
Trombicula splendens, 141
Trypodendron lineatum, 213
Tydeidae, 361
Typhaea stercorea, 117
Typhlodromus
cucumeris, 649
fallacis, 787
reticulatus, 649

Ulex europaeus, 498
Unaspis euonymi, 87

Vasates fockeui, 564
Virus
disease, transmitted by aphids, 727
pea enation mosaic, host range and transmission of, 770
peach yellow leaf roll, new insect vector of, 668
polyhedrosis, for control of cabbage looper, 551

Weather, relation of to winter survival of the pink bollworm, 643
Wheat,
damaged by a sugarcane leafhopper in India, 837
damage to by greenbugs as affected by fertilizer applications, 793
streak-mosaic virus, insect and mite transmission of, 168
Wireworms, 43
toxic residues remaining after control, 222

Yellow clover aphid complex, host plants of, 231

Zeadiatreae grandiosella, 103, 270